

CLAIMS

1. A liquid crystal display comprising:

a UV curable liquid crystal side substrate having a first substrate, an electrode layer formed on the first substrate, a first alignment layer formed on the electrode layer, and a UV curable liquid crystal layer with a UV curable liquid crystal fixed and formed on the first alignment layer; and

a counter substrate having a second substrate, an electrode layer formed on the second substrate, and a second alignment layer formed on the electrode layer, characterized in that the UV curable liquid crystal layer of the UV curable liquid crystal side substrate and the second alignment layer of the counter substrate are disposed so as to face each other such that a ferroelectric liquid crystal is sandwiched between the UV curable liquid crystal side substrate and the counter substrate.

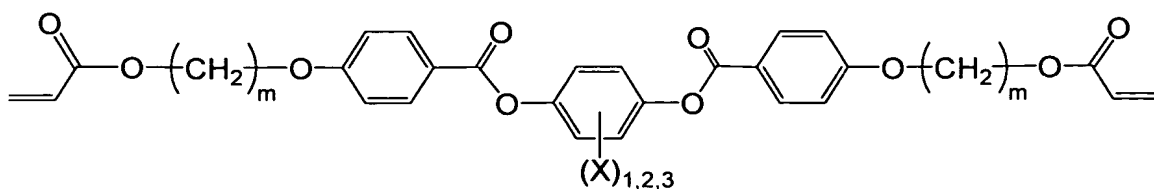
2. The liquid crystal display according to claim 1, characterized in that a second UV curable liquid crystal layer with a UV curable liquid crystal fixed on the second alignment layer is formed, and the UV curable liquid crystal comprising the UV curable liquid crystal layer and the UV curable liquid crystal comprising the second UV curable liquid crystal layer are different compositions.

3. The liquid crystal display according to claim 1 or 2, characterized in that the UV curable liquid crystal shows a nematic phase.

4. The liquid crystal display according to claim 3, characterized in that the UV curable liquid crystal has a polymerizable liquid crystal monomer.

5. The liquid crystal display according to claim 4, characterized in that the polymerizable liquid crystal monomer is a monoacrylate monomer or a diacrylate monomer.

6. The liquid crystal display according to claim 5, characterized in that the diacrylate monomer is a compound represented by a below-mentioned formula (1):

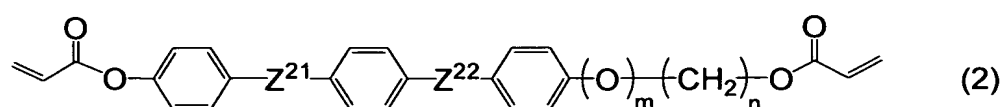


(1)

(Here, X in the formula is a hydrogen, an alkyl having 1 to 20 carbon atoms, an alkenyl having 1 to 20 carbon atoms, an alkyloxy having 1 to 20 carbon atoms, an alkyloxy carbonyl having 1 to 20 carbon atoms, a formyl, an alkyl carbonyl having 1 to 20 carbon atoms, an alkyl carbonyloxy having

1 to 20 carbon atoms, a halogen, a cyano or a nitro; and m is an integer in a range of 2 to 20).

7. The liquid crystal display according to claim 5, characterized in that the diacrylate monomer is a compound represented by a below-mentioned formula (2):



(Here, Z^{21} and Z^{22} in the formula are each independently directly bonded $-\text{COO}-$, $-\text{OCO}-$, $-\text{O}-$, $-\text{CH}_2\text{CH}_2-$, $-\text{CH}=\text{CH}-$, $-\text{C}\equiv\text{C}-$, $-\text{OCH}_2-$, $-\text{CH}_2\text{O}-$, $-\text{CH}_2\text{CH}_2\text{COO}-$ or $-\text{OCOCH}_2\text{CH}_2-$; m is 0 or 1; and n is an integer in a range of 2 to 8).

8. The liquid crystal display according to any one of claims 1 to 7, characterized in that the first alignment layer and the second alignment layer are a photo alignment layer respectively.

9. The liquid crystal display according to any one of claims 1 to 8, characterized in that the ferroelectric liquid crystal shows mono-stability.

10. The liquid crystal display according to any one of claims 1 to 9, characterized in that the ferroelectric liquid crystal does not have a smectic A phase in its phase

sequence.

11. The liquid crystal display according to any one of claims 1 to 10, characterized in that the ferroelectric liquid crystal comprises a single phase.

12. The liquid crystal display according to any one of claims 1 to 11, characterized in being driven by an active matrix system using a thin film transistor.

13. The liquid crystal display according to any one of claims 1 to 12, characterized in being displayed by a field sequential color system.